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10/811,273	03/25/2004	Christopher Brockett	M61.12-0618	2161

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10 March 2008</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-8,10-14 and 16-22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-8,10-14 and 16-22</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This communication is in response to the Amendment and Arguments filed on 03/10/2008. Claims 1-8, and 10-14 remain pending, while claims 16-22 are newly added. All claims have been examined. The Applicants' amendment and remarks have been carefully considered, but they do not place the claims in condition for allowance. Accordingly, this action has been made FINAL.

2.   All previous objections and rejections directed to the Applicant's disclosure and claims not discussed in this Office Action have been withdrawn by the Examiner.

Response to Arguments

3.   Applicant's arguments (pages 6-10) filed on 03/10/2008 with regard to claims 1-8, 10-14, and 16-22 have been fully considered but they are moot in view of new grounds for rejection.

Response to Amendment

4.   Applicants' amendments filed on 03/10/2008 have been fully considered. The newly amended limitations in claims 1, 8, and claims 16-22 necessitate new grounds of rejection.

Specification

5.   The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded

hyperlink and/or other form of browser-executable code. See MPEP § 608.01. This can be found on page 14 of the Applicant's Specification.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7.   Claims 1, 10, and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the claim limitation of "statistical textual alignment without pronunciation information of the words," as recited in independent claims 1 and 10 as well as dependent claims 12, do not enable one skilled in the art to make and use the invention. The specific portion of the Applicant's Specification that refers to the character based alignment not using pronunciation information is disclosed on page 14, 2nd paragraph through page 16, end of continued paragraph. Reference is made to an existing alignment system. The Applicant indicated that character based alignment can be done using the technique as described in the reference by Brown *et al.* However, the reference does not disclose or suggest that character alignment can be done using the techniques but rather discloses the alignment between a string of words and individual words (see Brown *et al.*, Figures 1-3, and section 3 (pages 266-268)). Hence, as

character alignment without using pronunciation information is what distinguishes the Applicant's invention from prior methods, the Specification does not enable one skilled in the art to perform character alignment without pronunciation information.

8.   Claims 2-8 and 10-14 are rejected for being dependent upon a non-enabling base claim.

9.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10.   Claims 17 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to what the applicant means by the term exclusively since the term can be interpreted to mean involving only particular items or portions of the items. Hence, for the purposes of compact prosecution the limitation was interpreted to mean portions of the items.

Claim Rejections - 35 USC § 102

11.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

12.   Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Lee *et al.*

("Acquisition of English-Chinese Transliterated word Pairs from Parallel Aligned Texts

using a Statistical Machine Transliteration Model").

As to claim 1, Lee *et al.* teaches a method of training a transliteration processing

system, comprising:

receiving a set of word pairs from different languages (see page 99,

Figure 3 and sect. 3, left column, 2nd paragraph); and

using statistical textual alignment (see page 98, left column, step 1- step

3) without pronunciation information of the words (see Figure 2, each character is

Romanized and mapped to the letter of the opposite language) to align

characters of each of the word pairs (see page 97, left column last paragraph,

line 5-right column, lines 1) (e.g. The characters are used for alignment); and

identifying the transliteration relationships (see page 99, Figure 3, and

page 99, right column, 1st paragraph) (e.g. Once the proper names have been

extracted and aligned based on the aligned characters, the transliteration can be

retrieved).

As to claim 2, Lee *et al.* teaches,

using statistical textual alignment to align words in parallel sentences to

form a set (see page 99, left column, sec. 3, 2nd paragraph and Figure 3) (e.g. A

statistical alignment is used to align the sentences).

As to claim 3, Lee *et al.* teaches,

identifying aligned word pairs from the set of sentences (see page 99, Figure 3, and left column, 2nd paragraph) (e.g. Identification of aligned pairs is carried out).

As to claim 4, Lee *et al.* teaches,

using the transliteration relationships to identify additional word pairs from the set of sentences (see page 98, right column, steps 1-page 99, left column, steps 2 and 3) (e.g. Form the cited section parameters are estimated depending on the word pairs found in the training set. Hence, it is evident that transliteration relationships are used based upon parameters found during training and then applied to the word pair).

As to claim 5, Lee *et al.* teaches,

calculating an alignment model based on the transliteration relationships identified (see page 98, left column, steps 1-3 and right column step 1-page 99, left column step 3) (e.g. From the cited sections, it is seen that the parameters are updated for the model based upon the current model for the word pair. Hence, the training of the previous word pairs is applied to the next word pair that may be unknown to the data set).

As to claim 6, Lee et al. teaches,

receiving an input text (see page 101, left column, sect. 4.1, lines 11-15); and generating a transliteration of the input text (see page 101, left column, sect. 4.1, lines 11-12, Table 1, and page 101, right column, 3rd paragraph, last four lines) based on the alignment model (e.g. The transliteration is done based on the alignment model (see page 98, left column, steps 1-3 and right column step 1-page 99, left column step 3)).

As to claim 7, Lee *et al.* teaches wherein calculating the alignment model based on the transliteration relationships identified includes

using the context supplied by neighboring characters (see page 100, sect. 3.1, R1 and R2) (e.g. It is see that in the former citation that words that can be transliterated into more than one word can be distinguished by the use of a common list. Further, the latter citation identifies characters, which do not belong to the character set. Probability distributions are used to identify such circumstances).

As to claim 8, Lee *et al.* teaches a transliteration processing system, comprising

a textual alignment component configured to receive a set of words (see page 99, , left column, sec. 3, 2nd paragraph and Figure 3) and identify transliteration relationships between words in the set of words based on

statistical alignment (see page 98, left column, step 1- step 3).of characters of the words without pronunciation information of the words (see Figure 2, each character is Romanized and mapped to the letter of the opposite language) (see page 99, Figure 3, and page 99, right column, 1st paragraph) (e.g. Once the proper names have been extracted and aligned based on the aligned characters, the transliteration can be retrieved).

As to claim 10, Lee *et al.* teaches wherein the textual alignment component

is configured to generate the alignment model based on statistical alignment of the characters (see page 97, left column last paragraph, line 5-rught column, lines 1) of the words including using the context supplied by neighboring characters (see page 100, sect. 3.1, R1 and R2) (e.g. It is see that in the former citation that words that can be transliterated into more than one word can be distinguished by the use of a common list. Further, the latter citation identifies characters, which do not belong to the character set. Probability distributions are used to identify such circumstances).

As to claim 11, Lee *et al.* teaches

a text aligning component configured to access a database and align sentences of parallel texts (see page 99, Figure 3 and page 101, sect. 4.1, lines 12-15) (e.g. It is implied that in order to carry out the experiment the following was stored in a database).

As to claims 12 and 13, Lee *et al.* teaches,

a data store storing the database (see page 99, Figure 3 and page 101, sect. 4.1, lines 12-15) (e.g. It is inherent that the parallel corpus is stored in memory or a data store in order to execute the experiment).

As to claim 14, Lee *et al.* teaches,

a transliteration generator, receiving a textual input (see page 101, left column, sect. 4.1, lines 11-12, Table 1, and page 101, right column, 3rd paragraph, last four lines) and generating a transliteration of the textual input based on the transliteration relationships (e.g. The transliteration is done based on the alignment model (See page 98, left column, steps 1-3 and right column step 1-page 99, left column step 3)).

Claim Rejections - 35 USC § 103

13.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14.   Claims 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee *et al.* ("Acquisition of English-Chinese Transliterated word Pairs from Parallel Aligned Texts using a Statistical Machine Transliteration Model") in view of Kang et al. ("Automatic Transliteration and Back-Transliteration by Decision Tree Learning").

As to claim 16, Lee *et al.* teaches a transliteration processing system, comprising:

receiving a set of word pairs from different languages (see page 99, Figure 3 and sect. 3, left column, 2nd paragraph); and

using statistical textual alignment (see page 98, left column, step 1- step 3) to align characters of each of the word pairs (see page 97, left column last paragraph, line 5-right column, lines 1) (e.g. The characters are used for alignment); and

identifying the transliteration relationships (see page 99, Figure 3, and page 99, right column, 1st paragraph) (e.g. Once the proper names have been extracted and aligned based on the aligned characters, the transliteration can be retrieved).

However, Lee et al. does not specifically disclose aligning at least one character with a null character of a word.

Kang et al. does teach alignment of a character with a null character (see page 3, left column, middle column, above "in the case of transliteration, characters "a" and "r" aligned with Korean character, the "-" indicates the null (see line 2 of the left column at top of page.))

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the transliteration processing as taught by Lee *et al.* with the use of null characters during alignment as taught by Kang *et al.* for the purpose of aligning characters that cannot be mapped into another language (see Kang page 2, right column, 1st paragraph, lines 4-10).

As to claim 17, Lee in view of Kang teaches all of the limitations as in claim 16, above.

Furthermore, Lee et al. teaches using statistical textual alignment (see page 98, left column, step 1- step 3) exclusively to align characters of each of the word pairs (see page 97, left column, 2nd paragraph and last paragraph, line 5-right column, lines 1) (e.g. The characters are used for alignment); and

As to claim 18, Lee in view of Kang teaches all of the limitations as in claim 16, above.

Furthermore, Lee et al. teaches calculating an alignment model based on the transliteration relationships identified (see page 98, left column, steps 1-3 and right column step 1-page 99, left column step 3) (e.g. From the cited sections, it is seen that the parameters are updated for the model based upon the current model for the word pair. Hence, the training of the previous word pairs is applied to the next word pair that may be unknown to the data set).

As to claim 19, Lee in view of Kang teaches all of the limitations as in claim 16, above.

Furthermore, Lee et al. teaches using the context supplied by neighboring characters (see page 100, sect. 3.1, R1 and R2) (e.g. It is see that in the former citation that words that can be transliterated into more than one word can be distinguished by the use of a common list. Further, the latter citation identifies characters, which do not belong to the character set. Probability distributions are used to identify such circumstances).

As to claims 20 and 22, Lee teaches all of the limitations as in claims 1 and 8, above.

However, Lee *et al.* does not specifically disclose aligning at least one character with a null character of a word.

Kang *et al.* does teach alignment of a character with a null character (see page 3, left column, middle column, above "in the case of transliteration, characters "a" and "r" aligned with Korean character, the "-" indicates the null (see line 2 of the left column at top of page.))

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the transliteration processing as taught by Lee *et al.* with the use of null characters during alignment as taught by Kang *et al.* for the purpose of aligning characters that cannot be mapped into another language (see Kang page 2, right column, 1st paragraph, lines 4-10).

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As to claim 21, Lee in view of Kang teaches all of the limitations as in claim 20, above.

Furthermore, Lee et al. teaches identifying the transliteration relationships (see page 99, Figure 3, and page 99, right column, 1st paragraph) (e.g. Once the proper names have been extracted and aligned based exclusively on the aligned characters, the transliteration can be retrieved) based on the statistical textual alignment (see page 98, left column, step 1- step 3) without pronunciation information of the words (see Figure 2, each character is Romanized and mapped to the letter of the opposite language) to align characters of each of the word pairs (see page 97, left column last paragraph, line 5-right column, lines 1) (e.g. The characters are used for alignment);

Conclusion

15.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brown *et al.* (US 5,477,451) is cited to disclose natural language translation using alignment. Berger *et al.* (US 5,510,981) is cited to disclose translating words from one language to another using context-based models.

The NPL document by Covington ("An Algorithm to Align Words for Historical Comparison") is cited to teach word alignment using phonetic similarity

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PARAS SHAH whose telephone number is (571)270-1650. The examiner can normally be reached on MON.-THURS. 7:00a.m.-4:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571)272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paras Shah/
Examiner, Art Unit 2626

05/05/2008
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Supervisory Patent Examiner, Art Unit 2626